

11107 100

***ADDENDUM NO. 1 TO THE FINAL AMENDED WORK PLAN  
FOR STABILIZATION OF HAZARDOUS WASTE IN GRANITE CITY,  
MADISON, AND VENICE, ILLINOIS, ASSOCIATED WITH  
NL INDUSTRIES/TARACORP SUPERFUND SITE FOR  
SAMPLING, STABILIZATION, AND ANALYSES FOR ILLINOIS  
STATE ACCEPTANCE CRITERIA***

Submitted to:

**United States Army Corps of Engineers  
Omaha, Nebraska**

Submitted by:

**OHM Remediation Services Corp.  
a subsidiary of**



**OHM Corporation**

**January 28, 1994  
Project 13407**

**Lawrence J. Hoffman**  
Project Manager  
Midwest Region



**OHM Corporation**

Direct Dial 419-425-6060  
Facsimile 419-425-6087

January 28, 1994

United States Army Corps of Engineers  
ATTN: CEMRO-CD-FC (SCHMIDT)  
Building 527  
Fairchild Hall - 3rd Floor  
Offutt AFB, NE 68113

RE: NL Industries/TaraCorp Superfund Site, Granite City, Illinois  
An Amendment to the Chemical Sampling and Analytical Plan  
DACW45-89-0516; Delivery Order No. 0058  
OHM Project 13407

Dear Mr. Schmidt:

Enclosed is the amendment to the Chemical Sampling and Analytical Plan for the above-referenced site. The amendment requires approval to permit sampling and analysis for disposal of stabilized material.

Please contact me with any questions or comments you may have. I can be reached at 419-425-6060.

Respectfully submitted,

Lawrence J. Hoffman  
Project Manager  
Midwest Region

ADDENDUM NUMBER 1 TO THE FINAL  
AMENDED WORK PLAN FOR STABILIZATION  
OF HAZARDOUS WASTE IN GRANITE  
CITY, MADISON, AND VENICE, ILLINOIS,  
ASSOCIATED WITH NL INDUSTRIES/  
TARACORP SUPERFUND SITE FOR  
SAMPLING, STABILIZATION, AND  
ANALYSES FOR ILLINOIS STATE  
ACCEPTANCE CRITERIA


Prepared for:

United States Army Corps of Engineers  
Omaha District

Submitted by

OHM Remediation Services Corp.  
Midwest Region

Prepared by:

 824  
Willis R. Moody  
QC Supervisor  
Midwest Region

Approved by:

  
Larry Hoffman  
Project Manager  
Midwest Region

January 28, 1994  
Project 13407

*This information is the exclusive property of the party to whom it is addressed. OHM Remediation Services Corp. assumes no responsibility or liability for the reliance hereon or use hereof by anyone other than the party to whom it is addressed. ©1994 OHM Remediation Services Corp.*

## **TABLE OF CONTENTS**

---

<b>1.0</b>	<b>INTRODUCTION</b>	<b>1-1</b>
<b>2.0</b>	<b>OBJECTIVE</b>	<b>2-1</b>
2.1	DATA QUALITY OBJECTIVES	2-1
2.2	DATA TYPE	2-1
2.3	DATA USE	2-1
2.4	DATA QUANTITY NEEDS	2-1
2.5	DATA QUALITY NEEDS	2-2
2.6	PARCC PARAMETERS	2-2
<b>3.0</b>	<b>STRATEGY</b>	<b>3-1</b>
<b>4.0</b>	<b>METHODOLOGY</b>	<b>4-1</b>
4.1	IDENTIFICATION OF SITES	4-1
4.2	LOCATION OF SAMPLE POINTS	4-1
4.3	SAMPLING SKETCHES	4-1
4.4	DECONTAMINATION OF SAMPLING EQUIPMENT	4-1
4.5	SAMPLE COLLECTION	4-2
4.6	SAMPLE DOCUMENTATION	4-2
4.7	SAMPLE CONTAINERS, PRESERVATION, AND SHIPMENT	4-3
<b>5.0</b>	<b>ANALYSES</b>	<b>5-1</b>
5.1	LABORATORY PREPARATION OF COMPOSITES	5-1
5.2	STABILIZATION OF SAMPLES FOR TESTING	5-1
5.3	ANALYTICAL PROCEDURES	5-1
5.4	RETENTION OF SAMPLES	5-1
<b>6.0</b>	<b>DATA ANALYSIS</b>	<b>6-1</b>
<b>APPENDIX A - REMOTE SITE MAPS</b>		
<b>APPENDIX B - EQUIPMENT LIST</b>		
<b>APPENDIX C - ANALYTICAL REQUEST FORMS</b>		



## **1.0 INTRODUCTION**

---

OHM Remediation Services Corp. (OHM), a wholly owned subsidiary of OHM Corporation, is presenting this Contractor's Sampling and Analysis Plan (CSAP) Amendment to address the sampling of 14 remote sites located in the general region of Granite City, Illinois, that are known to have lead-contaminated soil. This project is under OHM's Contract No. DACW45-89-0516 with the United States Army Corps of Engineers (USACE), Delivery Order No. 58. The lead contamination is assumed to be from the demolition and disassembly of lead-acid batteries. Three discrete samples will be taken of the soil from each site. These samples will be shipped to OHM's treatability laboratory located in Findlay, Ohio. A volume based composite of all 14 sites will be generated. This composite sample will be stabilized with 17 percent Portland cement and submitted to Analytical Services Corp. (ASC), a wholly owned subsidiary of OHM Corporation, Findlay, Ohio, laboratory for Illinois Green Sheet Analyses. The remaining sample will be retained for future stabilization, disposal analyses, or profiling activities, as required.



## **2.0 OBJECTIVE**

---

The objective of this sampling and analysis activity is to generate a stabilized sample which is representative of the expected product from proposed full-scale stabilization process. This stabilized sample will be analyzed for Illinois Green Sheet parameters. These analytical results will be used to secure the special waste permits for a select facility in the state of Illinois. If a special waste permit for the state of Missouri is desired, samples from each individual site must be stabilized and analyzed as described for the Illinois permit. The remaining samples can be used for this purpose as directed by the USACE on-scene representative (OSR).

### **2.1 DATA QUALITY OBJECTIVES**

The data quality objectives for this sample activity are as follows:

- ▶ To generate quantitative data sufficient to procure a special waste permit for selected facilities in the state of Illinois.
- ▶ If authorized by the USACE-OSR, to generate quantitative data sufficient to procure a special waste permit for selected facilities in the state of Missouri.

### **2.2 DATA TYPE**

Chemical analyses of stabilized soil sample(s) for parameters listed on the Illinois Green Sheet.

### **2.3 DATA USE**

To procure special waste permit(s) for disposal facilities.

### **2.4 DATA QUANTITY NEEDS**

- ▶ Stabilized sample(s) must be representative of the product produced by the full-scale stabilization process.
- ▶ For facilities in the state of Illinois, one composite sample of all 14 sites (stabilized)
- ▶ For facilities in the state of Missouri, one stabilized sample from each individual site



**2.5 DATA QUALITY NEEDS**

Primary Data Quality Factors	
Data Use	Disposal characterization
Analytical Level	I
Primary Contaminant of Concern	Lead
Level of Concern	TCLP Lead 5 milligrams per liter
Require Detection	200 milligrams per liter
Critical Sample	Sample(s) must be stabilized in accordance to the proposed full-scale stabilization process mix design

**2.6 PARCC PARAMETERS****2.6.1 Precision**

The selected laboratory will follow United States Environmental Protection Agency (USEPA) protocol for the required analytical methods. Precision will be method specific. Replicate samples will be analyzed at a rate of 5 percent for each laboratory batch that is run.

**2.6.2 Accuracy**

Accuracy is method specific. Method spikes and method spike duplicates will be run on a batch basis by the selected laboratory. Spikes and spike duplicates will be analyzed at a rate of 5 percent for each batch that is run.

**2.6.3 Representativeness**

Multiple samples will be collected from each site and composited to produce a sample that is representative of the remote site.

**2.6.4 Completeness**

A goal of 95 percent completeness has been established for this sampling and analytical event. Completeness is defined as that value obtained by dividing the number of valid acceptable measurements obtained by the total number of measurements obtained.



### **3.0 STRATEGY**

---

Site sampling will be performed under winter weather conditions. This may result in having to use additional equipment beyond what would normally be used for soil sampling. It may be necessary to supply the sampling crew with a power chisel and associated equipment to break up the soil surface so that representative soil samples can be obtained. To locate appropriate sample points, a snow shovel may be needed to clear off a number of locations on each remote site until three points can be found that are visually contaminated with battery chips.





## **4.0 METHODOLOGY**

---

### **4.1 IDENTIFICATION OF SITES**

Sites will be identified by their names and by street numbers, as well as by their distance from any prominent local landmarks or street intersections.

### **4.2 LOCATION OF SAMPLE POINTS**

The sampling of the sites will involve locating and sampling three sample points for those sites that essentially consist of an alley and no less than three sample points for those sites that are essentially residential lots. Remote site maps will be used to accomplish this sampling effort.

A benchmark will be established for each remote site (using a building corner or similar distinct permanent fixture). Distances from the benchmark to the sample points will be measured and recorded in the sampler's field logbook and on the remote site maps.

### **4.3 SAMPLING SKETCHES**

Sampling sketches will be prepared using the site maps found in Appendix A to graphically describe the sampling of each remote site. The sketches will show the locations for all sample points associated with a remote site.

### **4.4 DECONTAMINATION OF SAMPLING EQUIPMENT**

A bucket auger will be used to collect samples. If soil surface freezing occurs, a power chisel will be used. A chisel type light to medium duty electric or pneumatic jack hammer and its associated back-up equipment will be used to collect the samples. Since the samples for each site are to be composited, the sampling equipment will be decontaminated before sampling begins, between remote sites, and at the end of each day's sampling activities. The general procedures for decontamination follow the procedures in Section 5.4 of the CSAP.

#### **4.4.1 Sampling Equipment Decontamination**

When dedicated equipment is not used for sampling, the following steps shall be accomplished:

- ▶ Wash with Alconox and tapwater
- ▶ Rinse with tapwater
- ▶ Rinse with dilute (0.1n) nitric acid.
- ▶ Rinse with tapwater



- ▶ Rinse with distilled water or deionized water
- ▶ Air dry

## 4.5 SAMPLE COLLECTION

The samples will be taken with a bucket auger from just below the surface of the soil. A power chisel may be needed to break up the soil surface and may be needed to produce pieces of frozen soil that are small enough to fit in sample jars. Appendix B contains a listing of equipment that usually will be required for the following sampling activities.

### 4.5.1 Sampling Procedures

The steps to be followed for the remote site surface soil sampling are as follows:

1. Determine/identify the sampling point locations on the site.
2. At each sampling point remove surface debris such as snow, tin cans, grass, and pieces of wood. Use a shovel or similar implement.
3. Don latex or nitrile sample gloves with cotton work gloves over them and excavate a hole, 3 to 4 inches or more deep using the power chisel (if needed due to frozen ground) and a shovel. Clean out the hole using the shovel.
4. Don new clean sample gloves and scrape/dig into the sides and bottom of the hole to obtain a soil sample using a bucket auger. The desired objective is to obtain the sample materials from the first 8 inches or so of soil.
5. After obtaining adequate sample volumes, seal the sample jars and label them. Apply a custody seal if one is required, then record the pertinent information about the sample(s) in the field logbook.
6. Place any used expendables in a trash bag (personal protective equipment [PPE] and similar). Decontaminate any non-disposable tools as described earlier if sampling is finished for the day.

## 4.6 SAMPLE DOCUMENTATION

The sample documentation consists of sample labels, sampler's logbook, field sampling notes, sketches, custody seals, and chain-of-custody forms. Sample labels will be completed at the time the jar is sealed and will be completed using indelible waterproof ink. Entries will be made in the notes as close as possible to the time the noted activities occur.



#### 4.7 SAMPLE CONTAINERS, PRESERVATION, AND SHIPMENT

The glass sample jars with Teflon-lined lids, cleaned to USEPA Protocol A specifications, will be used for sample containerization. All sample jars will be filled to capacity during sample collection and tightly sealed to minimize potential loss of volatiles. The lids of the jars will be sealed with tape to prevent them from loosening during transport. The sealed jars will be stored in sample coolers packed with bags of crushed ice to cool them to 4 degrees Celsius. The ice will be double bagged with leakproof plastic bags. The sample jars will be placed in double Ziplock bags to keep them dry in the event of leakage of water from the bags of ice. Bubble wrap will also be packed around the samples to keep them from breaking during shipment. The ice will be replaced, as necessary, to keep the samples cold prior to shipment. A chain-of-custody form will be prepared for each cooler and placed in the top of the cooler in a waterproof bag. The coolers will be sealed with four custody seals. Sample preservation and holding times will follow the USEPA guidelines. Sample containers will be shipped and labeled in accordance with current United States Department of Transportation requirements.



## **5.0 ANALYSES**

---

Composite samples will be prepared from the discrete remote site samples by a lab chemist in the treatability laboratory. The composites will be treated with Portland cement and then analyzed for disposal parameters.

### **5.1 LABORATORY PREPARATION OF COMPOSITES**

The discrete samples will be composited on a volume basis. Information will be obtained from project personnel that will contain estimates of the volumes of contaminated soil found at each remote site (i.e., if the total volume of soil found on all of the sites totals 2,000 cubic yards. If one site alone contains 1,000 cubic yards, the composite should be created in such a fashion that one-half of the composite sample by weight consists of material from the site that has 1,000 cubic yards of material present on it).

### **5.2 STABILIZATION OF SAMPLES FOR TESTING**

The composite sample will be stabilized in accordance to the previously-described mix design.

### **5.3 ANALYTICAL PROCEDURES**

Information on the analyses which need to be accomplished on the composite treated sample and the individual samples can be found in the Analytical Request Form in Appendix C.

### **5.4 RETENTION OF SAMPLES**

Any remaining samples must be held until further notification from on-site USACE or OHM project management or from OHM's Midwest Region Transportation and Disposal Department. These samples may be utilized for additional compositing, treating, or analysis for selected components.



## **6.0 DATA ANALYSIS**

---

After the samples have been tested and OHM has received a report from the laboratory, the report will undergo a full quality assurance review by an OHM project chemist. Any problems with data quality or reporting will be resolved at that time.

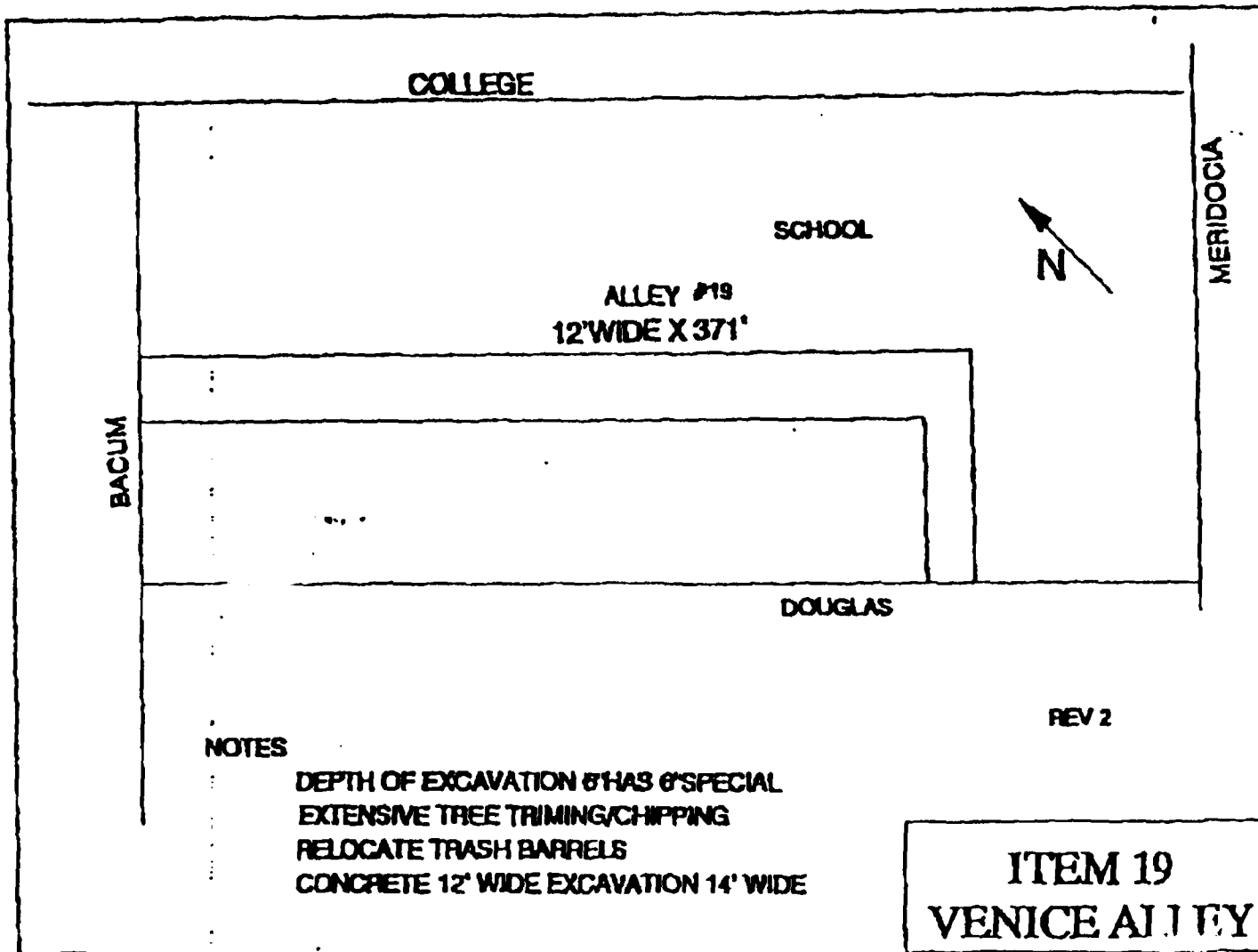


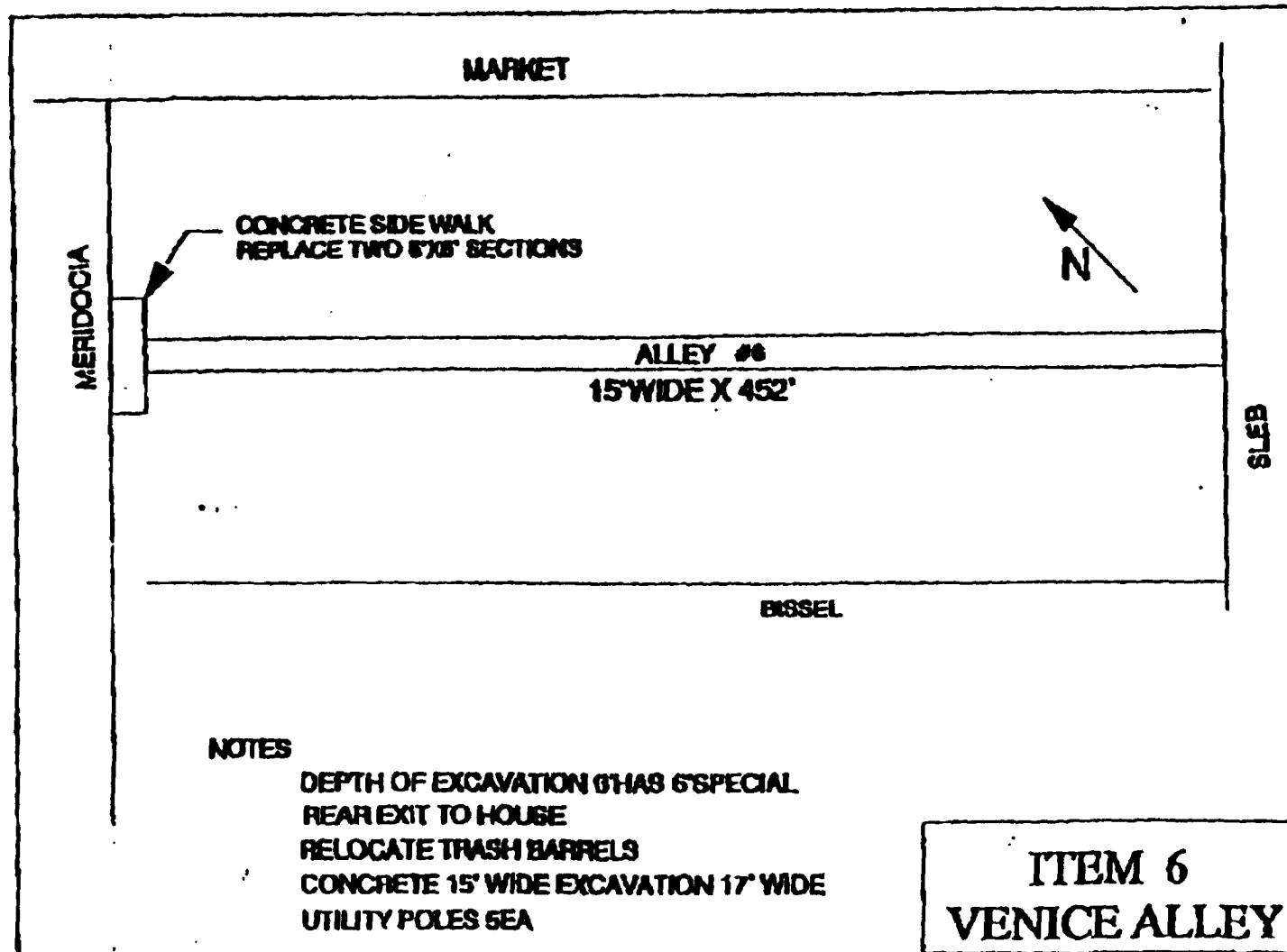
## **APPENDIX A**

---

### **REMOTE SITE MAPS**

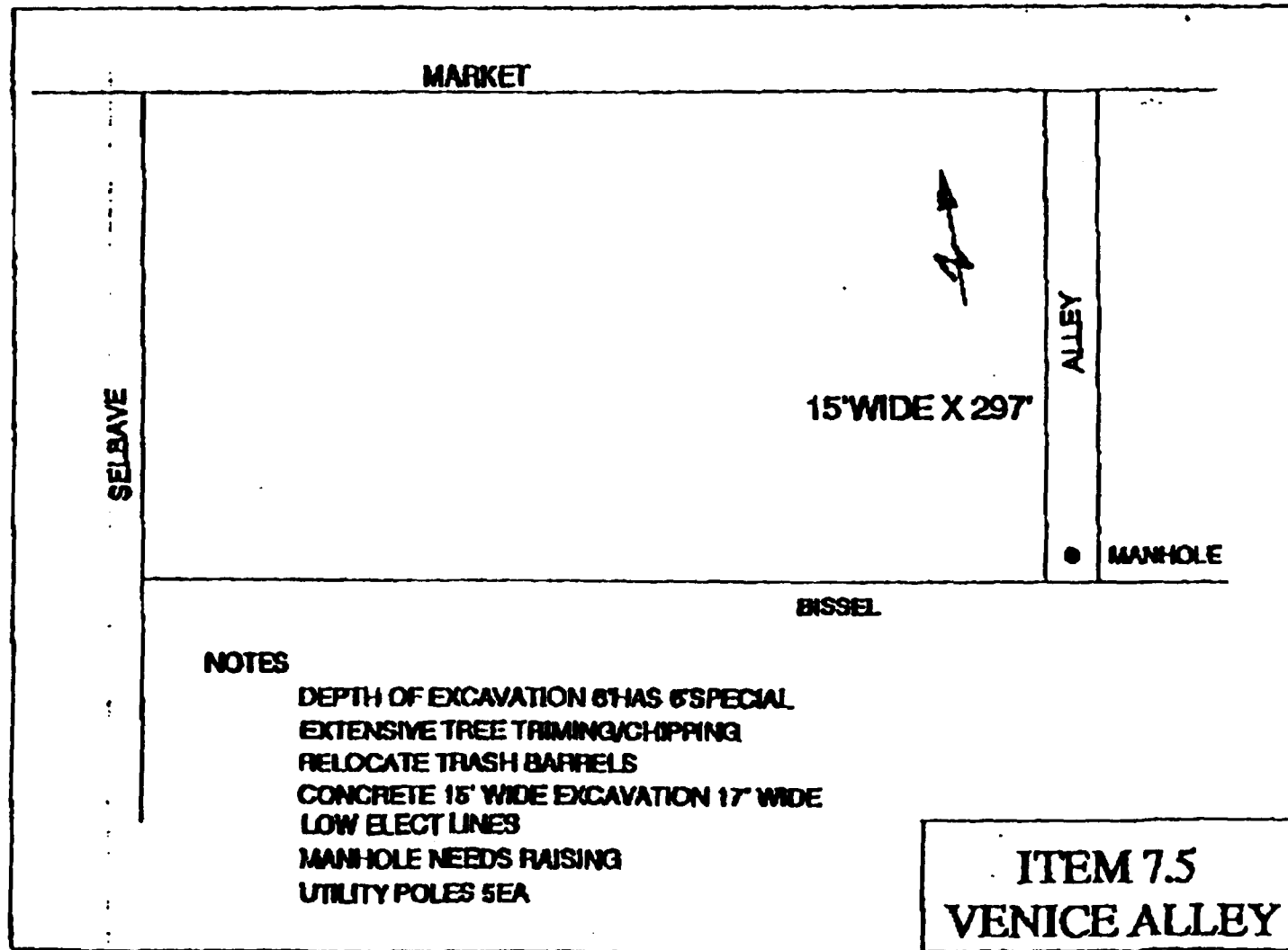
on Hold



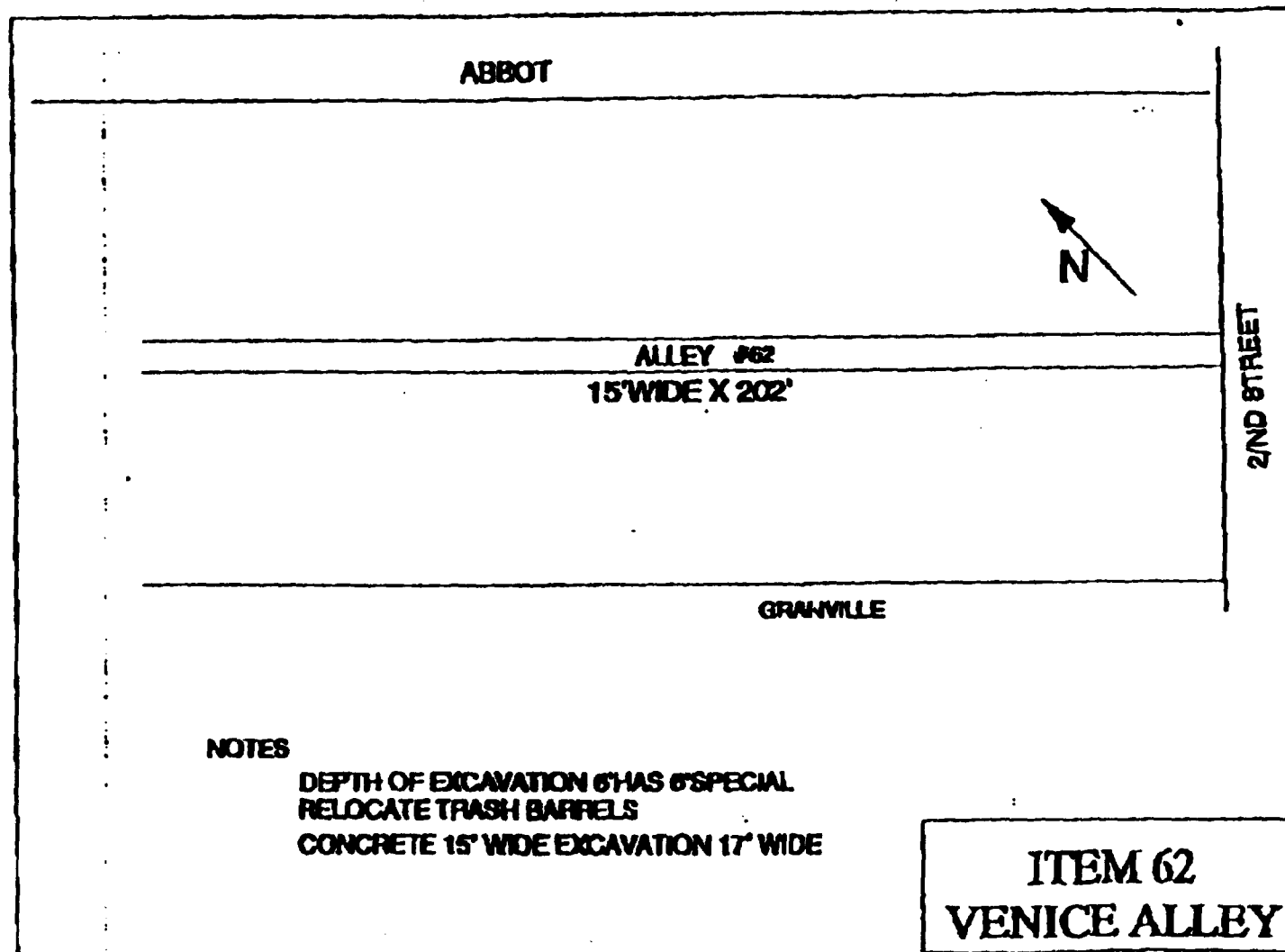




South West corner of alley is a stone survey marker  
which needs to be left in place and on 1900.

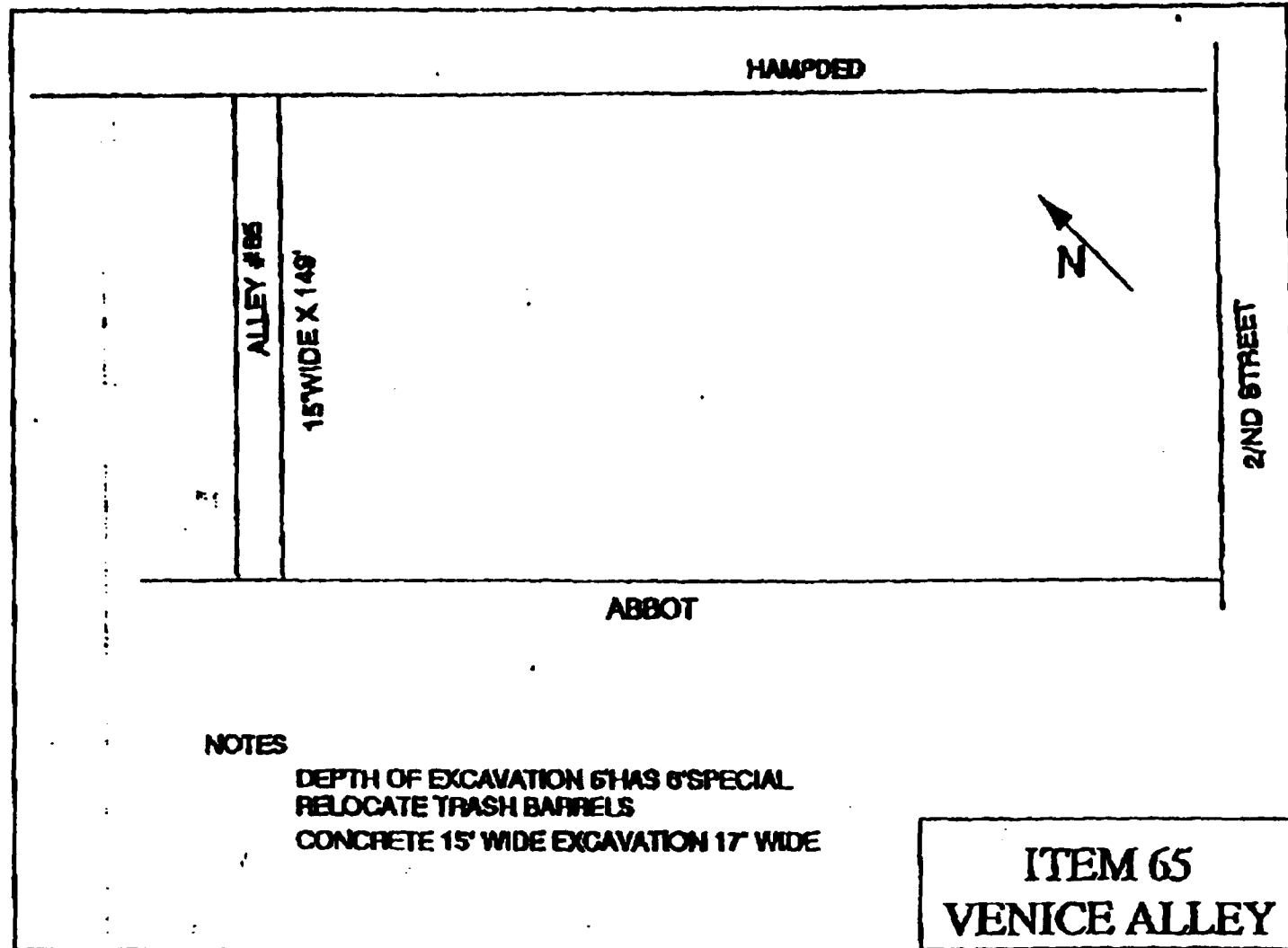


(22)



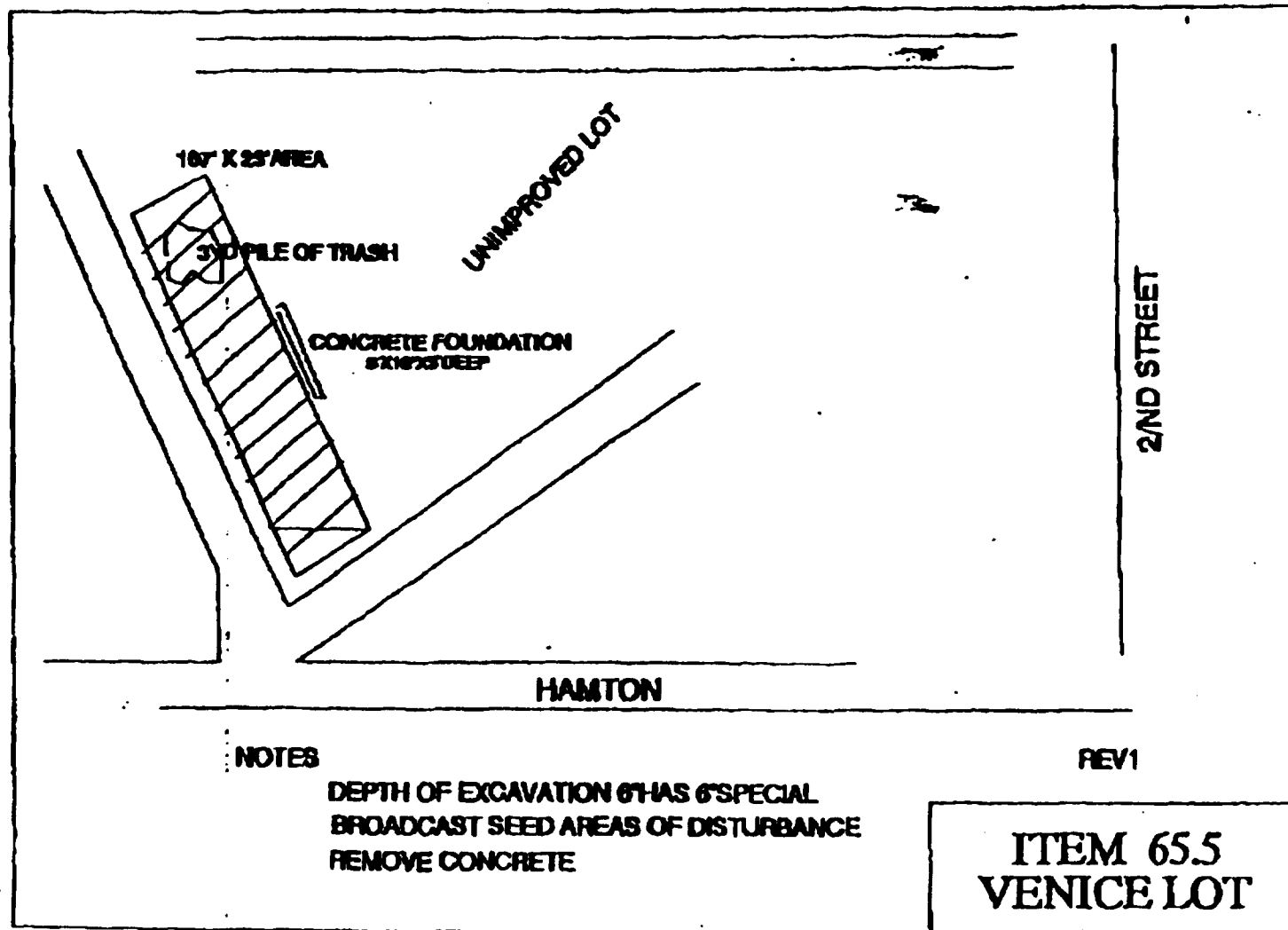
NO WAY TO DETERMINE AREA WITH 1' TIGHT

- NO DIMENSION ON PLOT MAP
- SUSPECT IS ON RR PROPERTY
- SCALE DISTANT FROM PLOT MAP TO GET APPROX LOCATION

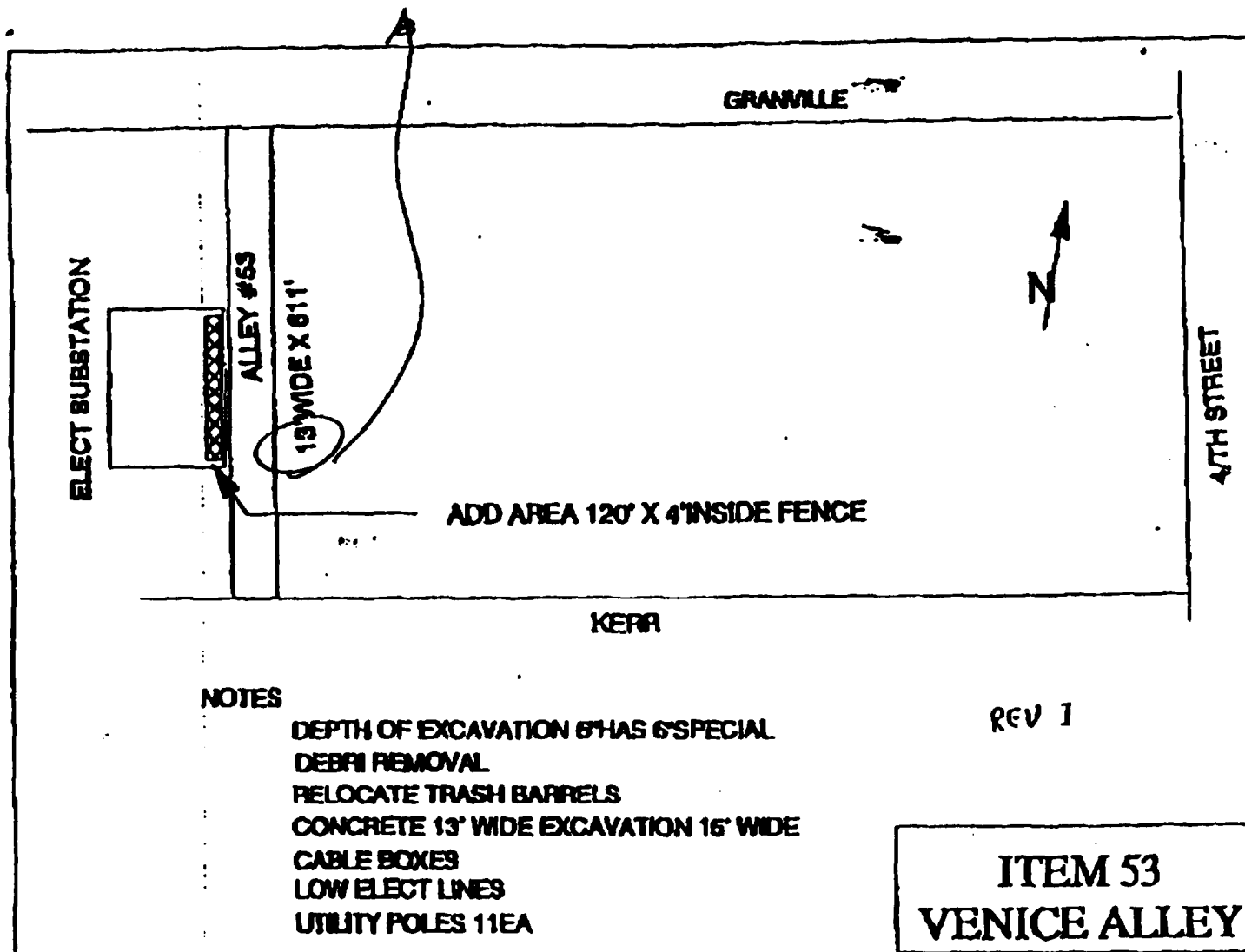


- EARTHQUAKE INTENSIFICATION LOT WITH 11' 1140
- EARTHQUAKE RR PROPERTY LINE

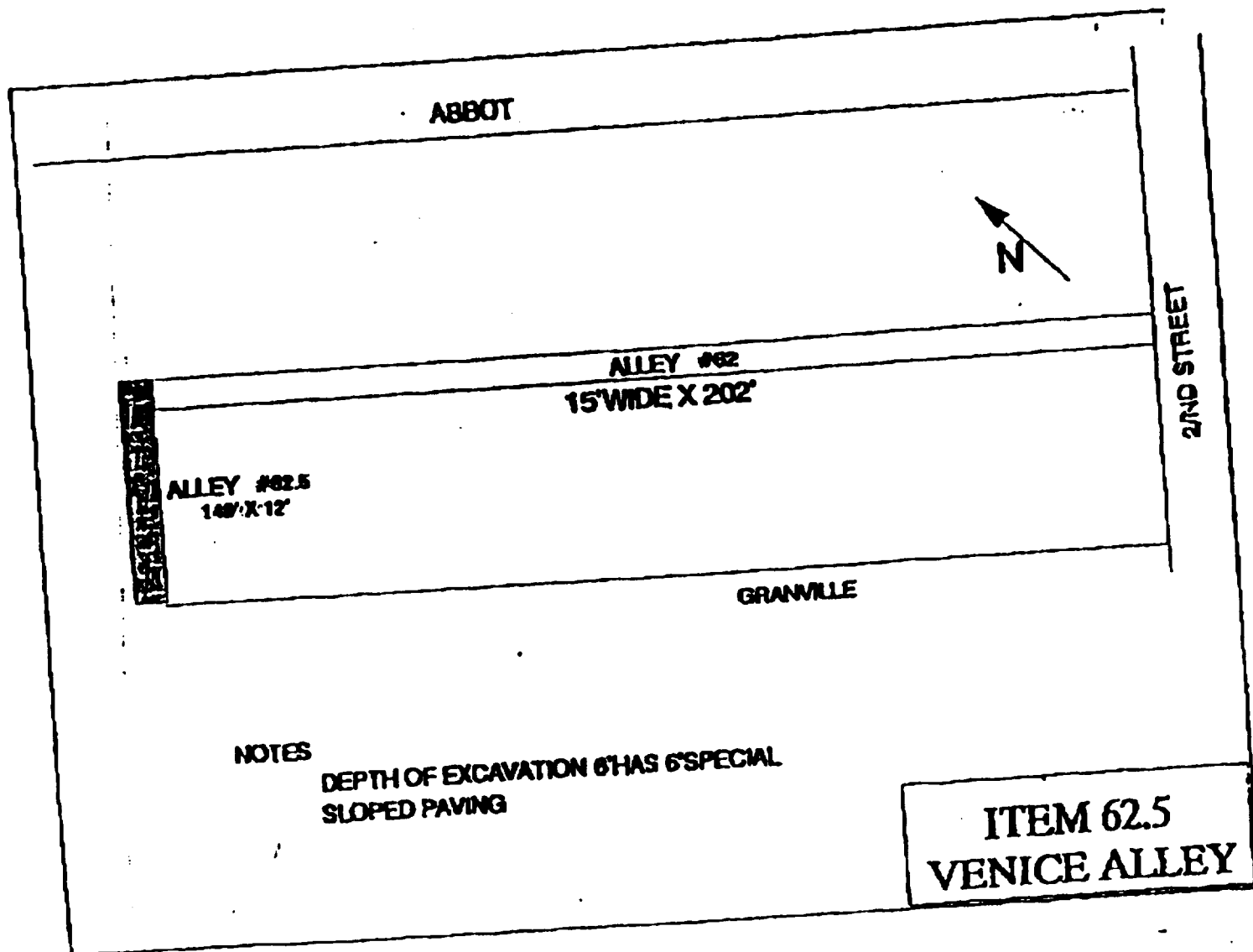
P.7



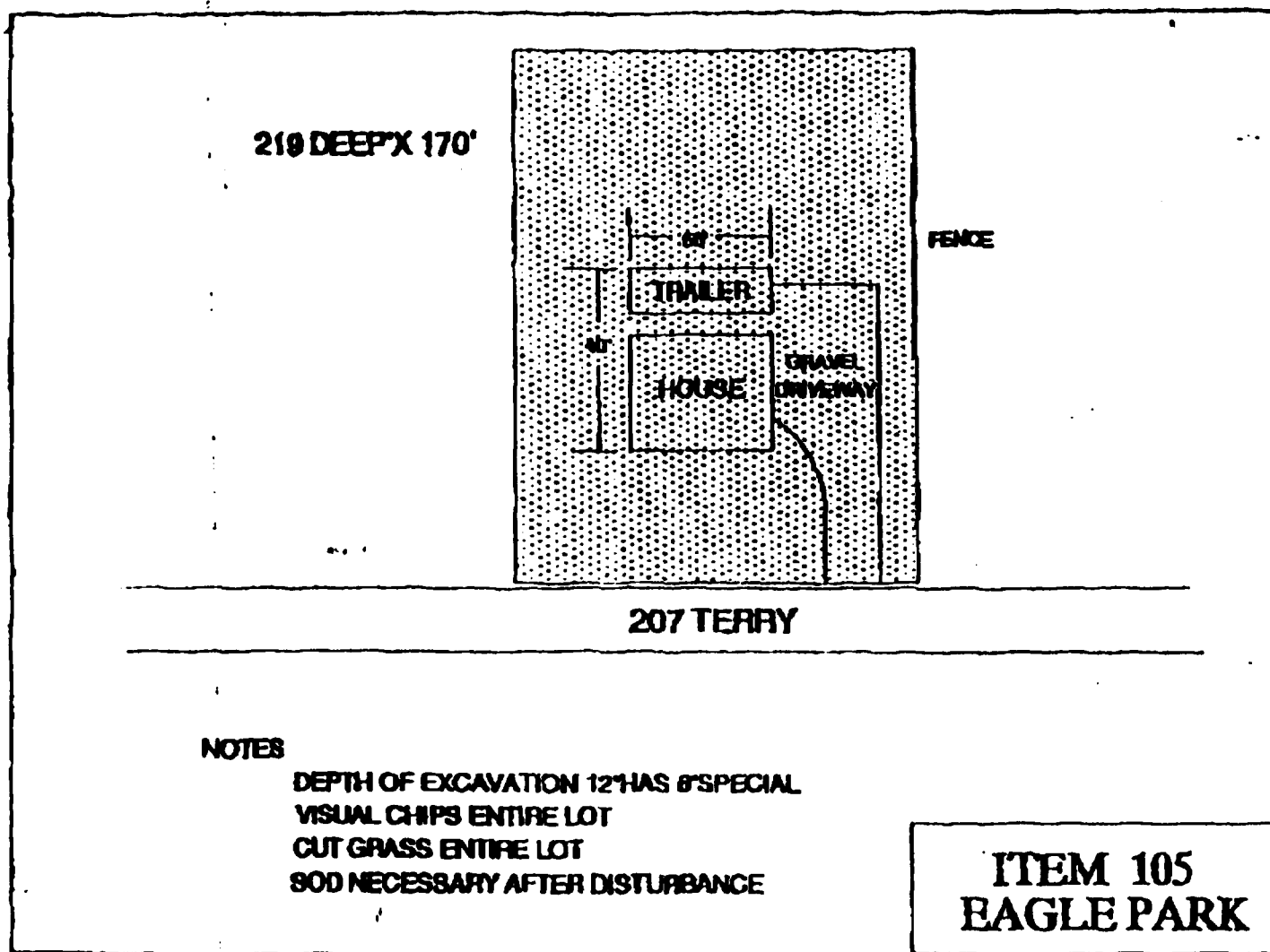
- and, when starting to work



- NO ALLOY PLOTTED
- SETTING STAKES TO INDICATE START OF RA PROPERTY LINE.

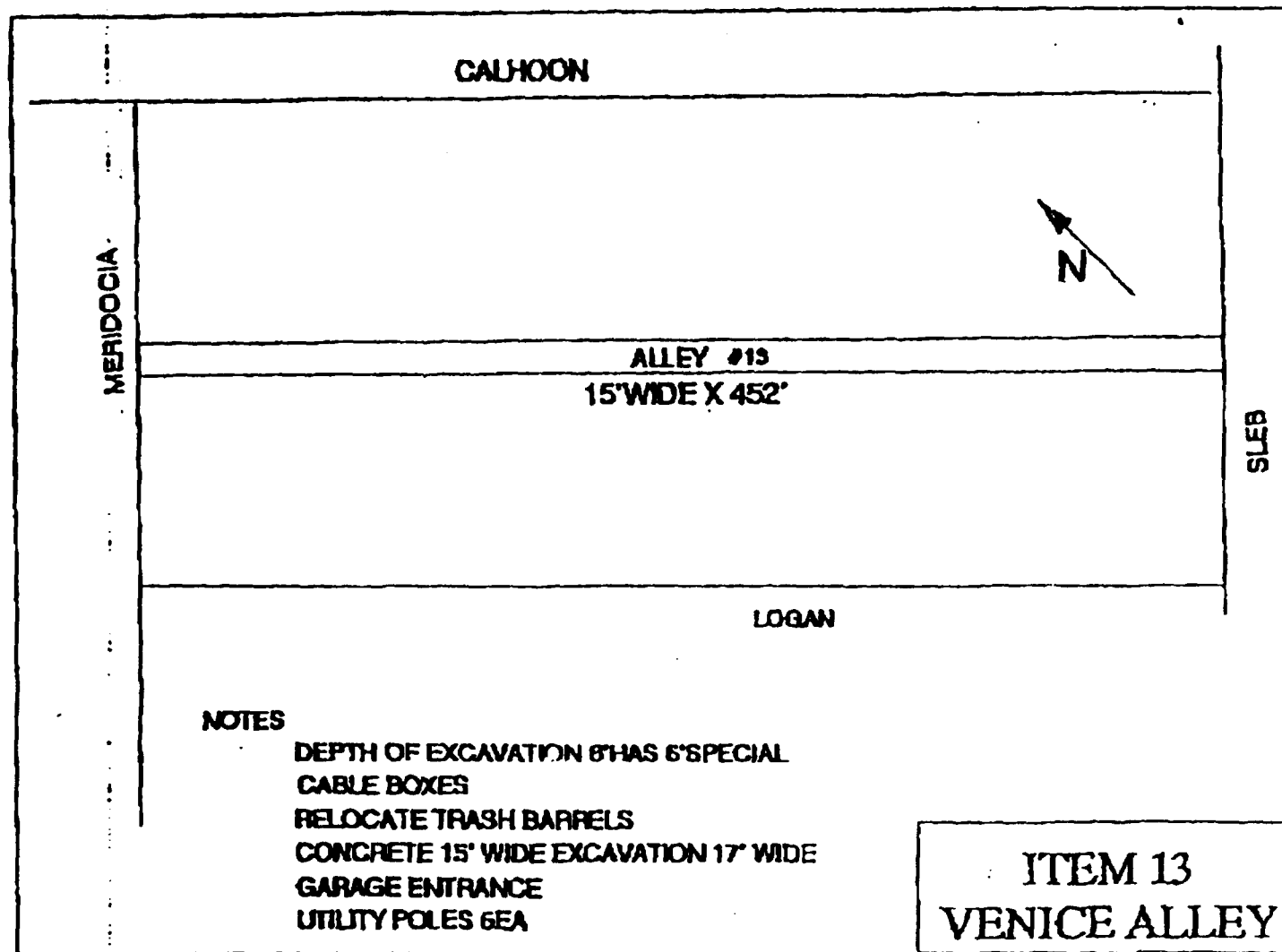


NO ANALYTICAL AVAILABLE

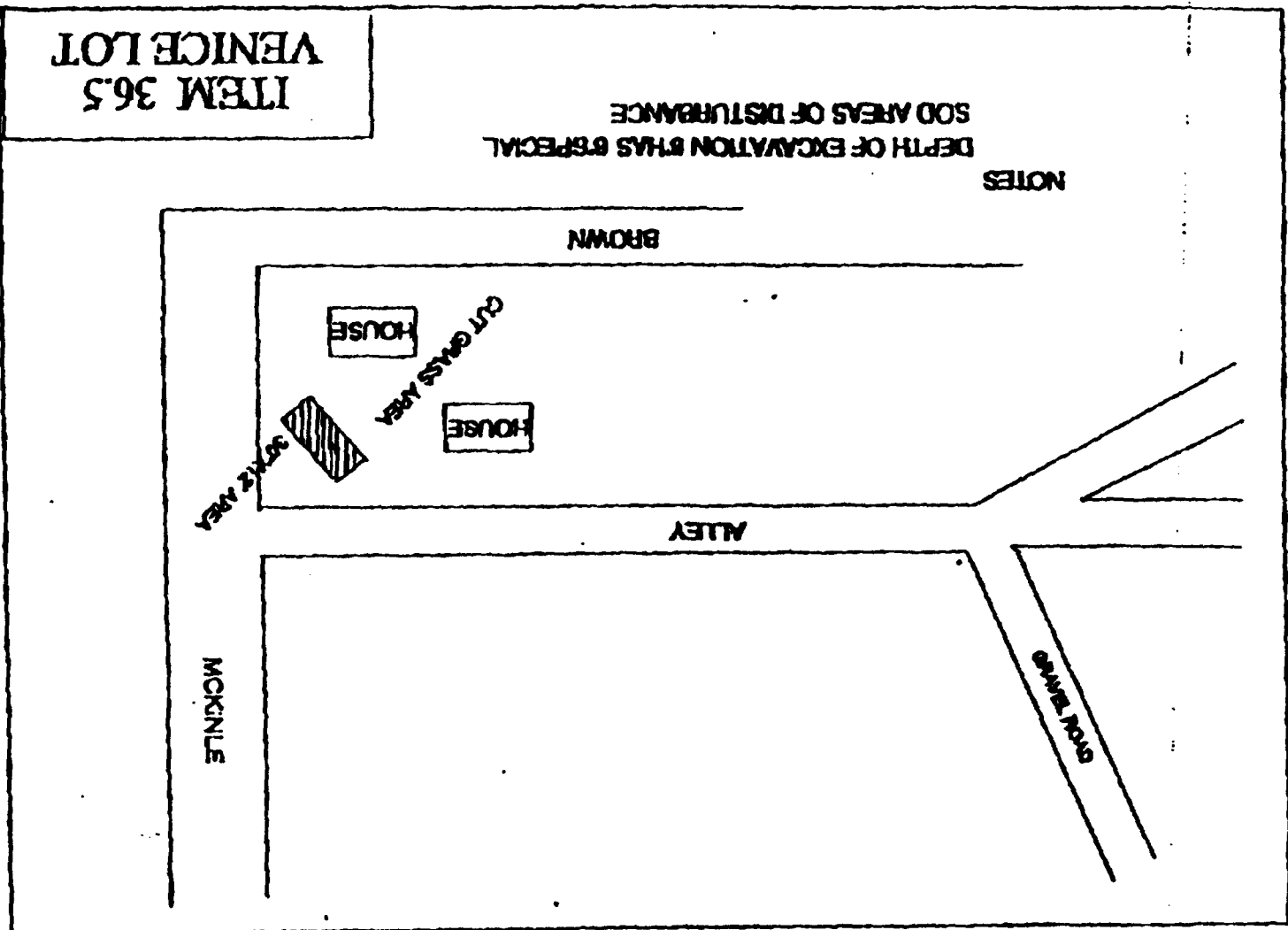




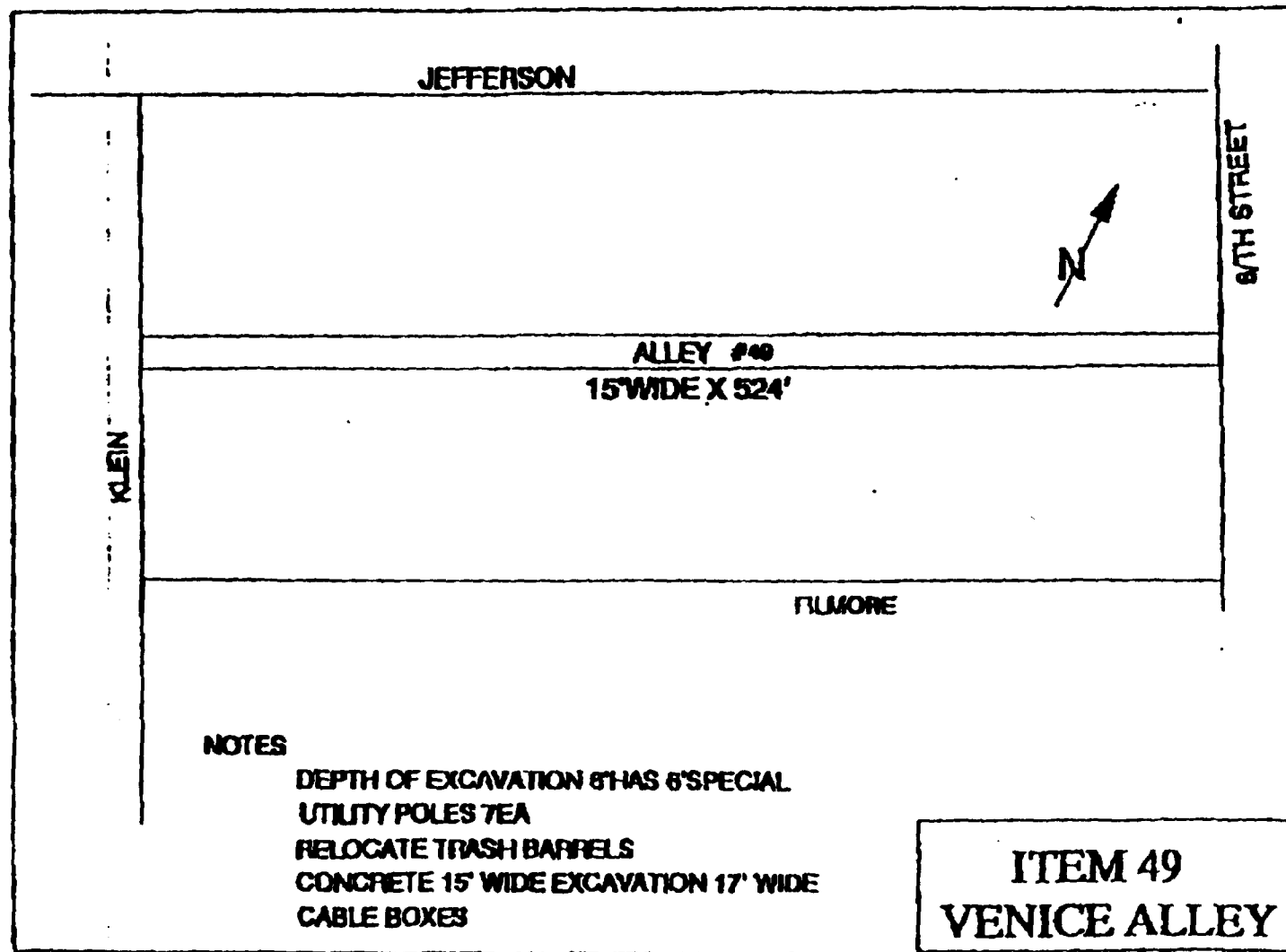




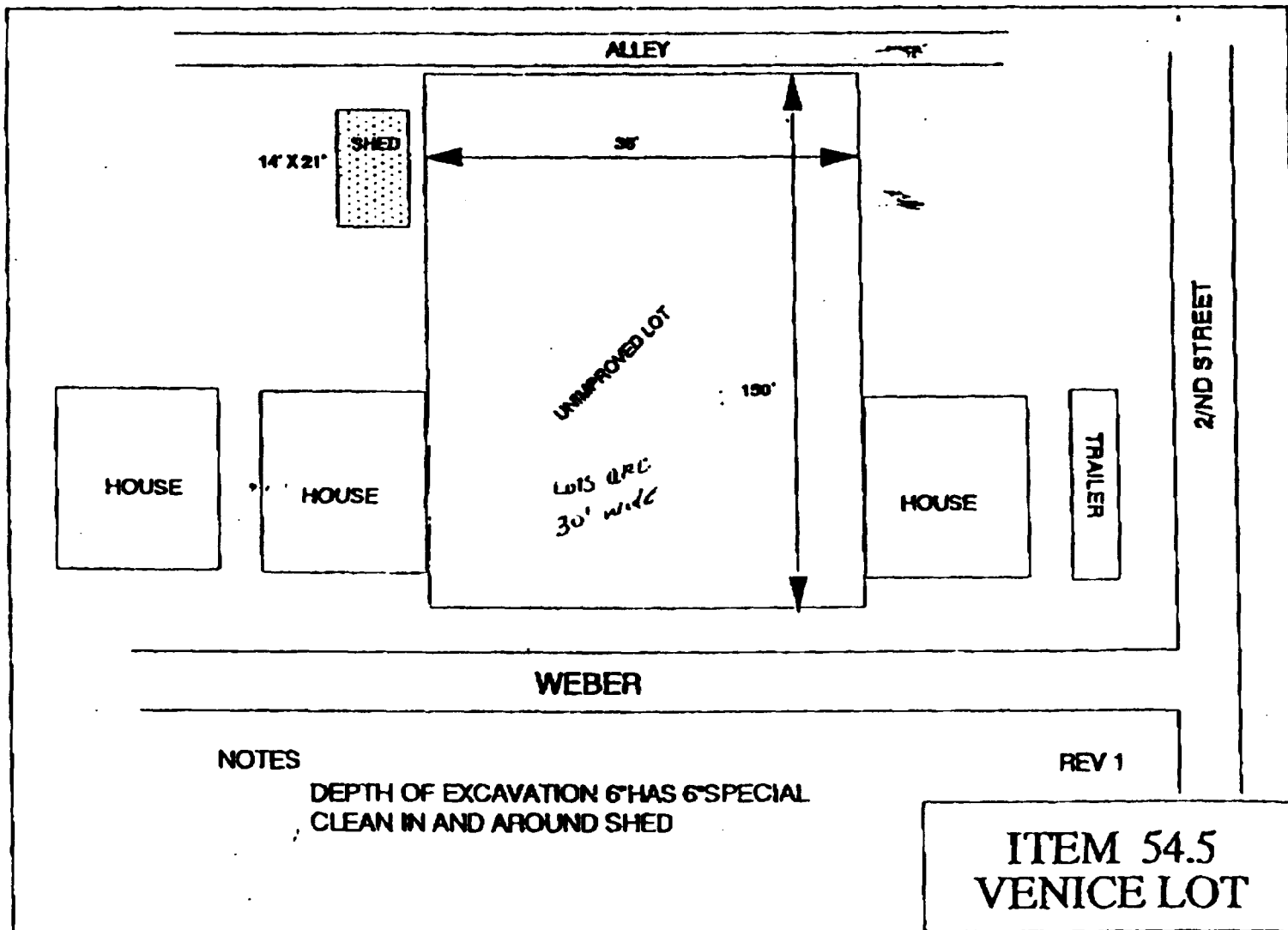
DATE: 08/14/01 11:11:11 AM 08/14/01 11:11:11 AM  
PAGE: 001 OF 001



LABET BOL WHO HAZZ:IT EG. EG INT



- STAKE ARE 1 30' FROM 30'
- PRIVATE SURVEY EXAMINATION. 1st FOR



## **APPENDIX B**

---

### **EQUIPMENT LIST**

## **APPENDIX B SAMPLING EQUIPMENT LIST**

The materials required to perform soil sampling at the remote sites may include the following.

### **Site Survey Equipment List**

- Calculator, pocket size (Local or Individual Purchase)
- Compass, Silva (Type 3, 7, 20) (Forestry Suppliers or Local Purchase)
- Mechanical pencil and graph paper (Local or Individual Purchase)
- Surveyors stakes (Forestry Suppliers P/N 39514)

### **Documentation List**

- Chain-of-Custody Forms
- Custody seals (where required)
- Field logbooks (Sample Logbook and Field Sampler's Notebook)
- Indelible waterproof ink pens for labels
- Marking pens, such as Sharpies and Mean Streaks
- Other OHM or site specific forms as required per CSAP
- 200 ft. tape, Lufkin 1708D (Forestry Suppliers P/N 33349)

### **Decontamination Equipment List**

- Alconox Detergent (VWR P/N 21835-032)
- DI Water (Local Purchase)
- Hydrochloric Acid, trace metal grade (P/N JT9530-0)
- Isopropyl Alcohol (2-Propanol) (VWR P/N JT9334-3)
- Nitric Acid, trace metal grade (VWR P/N JT9598-0)

- Scrub brushes and source of tap water (Local Purchase)
- Wash buckets or tubs/pans, 5-gallon size (Local Purchase)

#### PPE List

- Cotton work gloves (OHM supplied)
- Sample gloves, latex or nitrile (PVC is not acceptable)
- Trash bags, 30-gallon size, heavy duty (Local Purchase)

#### Sampling Equipment List

- Bucket auger, 2" or larger with one extension rod and handle
- Electric generator or compressor for jack hammer (equipped for winter operation (i.e., electric start, correct air dryers, etc)
- Sample containers, precleaned glass of appropriate size (32 oz and 8 oz with teflon lined lids).
- Spoon/spatula, stainless steel (VWR P/N 57952-107)
- Trowel, pointing, steel (Forestry Suppliers P/N 53717)
- Chisel head hammer, 24 oz. (Forestry Suppliers P/N 33349)
- Chisel point equipped electric or pneumatic jack hammer
- Clean shovel, spade, steel (Local Purchase)

#### Packaging List

- Bubble wrap
- Cooler, 48-54 quart (Rubbermaid or Coleman) (Local Purchase)
- Plastic ziplock bags, 1-quart size or larger for sample jars (Local Purchase)
- Plastic ziplock bags, 1-gallon size or larger for ice (Local Purchase)

## **APPENDIX C**

---

### **ANALYTICAL REQUEST FORMS**





OHM Corporation

**REQUEST FOR ANALYTICAL SERVICES****PROJECT INFORMATION**

Project Name:	Granite City	Project No:	13407
Client:	USACE	Project Manager:	Larry Hoffman
Project Location:	Granite City, IL	Technical Manager:	T. Sole
Date Submitted		QA Officer:	G. Gallelo

**Laboratory Information**

LABORATORY INFORMATION	
Laboratory Name	OHM Treatability Laboratory
Street Address	16406 U.S. Route 224 East
City, State	Findlay, Ohio 45840
Phone Number	(419) 423-3526
Laboratory Contact	Paul Lear
Submittal Date	
Date Received	

**APPROVALS**

	SIGNATURES
QUALITY ASSURANCE OFFICER	
PROJECT MANAGER	
CLIENT REPRESENTATIVE	

**SAMPLE INFORMATION**

Quantity	Matrix	Description	Analyses	Turn-around time
2/site	Soil	Lead Contaminated Soil Samples to be composited on for treatability study	Treatability Study	3 Days
1/site	Soil	For individual treatability studies as requested by L. Hoffman	Hold for Approval	3 Days

**Sampling Quality Assurance Samples**

Quantity	Sample Matrix	Field Quality Assurance Samples
NONE		Field Blanks (Matrix Blanks)
NONE		Equipment Blanks
NONE		Trip Blanks
NONE		Replicate Samples

**Laboratory Quality Assurance Quality Control**

Quantity	Matrix	Quality Assurance Samples Required
1 per batch	Soil	Method Blank
1 per batch	Soil	Method Spike
1 per batch	Soil	Matrix Spike
1 per batch	Soil	Matrix Spike Duplicate

**Required Laboratory Certifications**

Request	Certification	Request	Certification
	EPA Contract Laboratory	X	Corp of Engineers
	State:	X	MBE, WBE or SDB
	Client:		Other

**Deliverables**

Request	Deliverable	Request	Deliverable
X	Standard Analytical Report		QC raw data
X	Analytical Summary		Instrument raw data
X	QC Report		CLP package



OHM Corporation

**REQUEST FOR ANALYTICAL SERVICES****PROJECT INFORMATION**

Project Name:	Granite City	Project No:	13407
Client:	USACE	Project Manager:	Larry Hoffman
Project Location:	Granite City, IL	Technical Manager:	T. Sole
Date Submitted		QA Officer:	G. Gallelo

**Laboratory Information**

LABORATORY INFORMATION	
Laboratory Name	ASC
Street Address	16406 U.S. Route 224 East
City, State	Findlay, Ohio 45840
Phone Number	(419) 423-3526
Laboratory Contact	Bill Fithian
Submittal Date	
Date Received	

**APPROVALS**

	SIGNATURES
QUALITY ASSURANCE OFFICER	
PROJECT MANAGER	
CLIENT REPRESENTATIVE	

**SAMPLE INFORMATION**

Quantity	Matrix	Description	Analyses	Turn-around time
	Soil	Stabilized Lead Contaminated Soil Samples From treatability study	Illinois Green Sheet	3 Days

**Sampling Quality Assurance Samples**

Quantity	Sample Matrix	Field Quality Assurance Samples
NONE		Field Blanks (Matrix Blanks)
NONE		Equipment Blanks
NONE		Trip Blanks
NONE		Replicate Samples

**Laboratory Quality Assurance Quality Control**

Quantity	Matrix	Quality Assurance Samples Required
1 per batch	Soil	Method Blank
1 per batch	Soil	Method Spike
1 per batch	Soil	Matrix Spike
1 per batch	Soil	Matrix Spike Duplicate
1	TCLP Extract	Bias Correction Spikes

**Required Laboratory Certifications**

Request	Certification	Request	Certification
	EPA Contract Laboratory	X	Corp of Engineers
	State:	X	MBE, WBE or SDB
	Client:		Other

**Deliverables**

Request	Deliverable	Request	Deliverable
X	Standard Analytical Report		QC raw data
X	Analytical Summary		Instrument raw data
X	QC Report		CLP package

### LANDFILL DISPOSAL ANALYSIS

Quantity	Matrix	Parameters	Method	Detection Limit
	Soil	Bulk Density	SMEWW.2710F	NA
	Soil	Extractable Organic Halogen (EOX)	Illinois Method	MDL
	Soil	Physical Description (color, density)	Density - D1298 ASTM	NA
	Soil	Moisture Content (% WT)		1%
	Soil	Paint Filter test	SW-846 9095	NA
	Soil	pH	SW-846 9045	NA
	Soil	Reactive Cyanide	SW-846 9010	10
	Soil	Reactive Sulfide	SW-846 9030	10
	Soil	Flash Point	Sludge-SW-846 1010 Solid- SW-846 1020	
	Soil	Percent Solids	103°C for 24 hours	NA
	Soil	Total Organic Carbon (TOC)	SW-846 9060	
	Soil	Total Cyanide	SW-846 9010	1.0 mg/Kg
	Soil	Total Phenols	SW-846 9065	1.0 mg/Kg
		<b>TCLP Tests</b>	SW-846 1311	mg/L
	Soil	Arsenic	SW-846 7060, 7061	0.5
	Soil	Barium	SW-846 7080 or 6010	0.5
	Soil	Cadmium	SW-846 7130, 713 or 6010	0.5
	Soil	Chromium (Total)	SW-846 7190, 7191 or 6010	0.5
	Soil	Chromium (Hexavalent)	SW-846 7210 or 6010	0.5
	Soil	Lead	SW-846 7420, 7421 or 6010	0.5
	Soil	Mercury	SW-846 7470, 7471	0.05
	Soil	Selenium	SW-846 7740 or 7741	0.5
	Soil	Silver	SW-846 7760 or 6010	0.5

### LANDFILL DISPOSAL ANALYSIS

Quantity	Matrix	Parameters	Method	Detection Limit
		<b>TCLP Organics</b>	SW-846 1311	
	Soil	Volatiles ZHE	SW-846 8260	mg/L
	Soil	Benzene	SW-846 8260	0.5
	Soil	Carbon tetrachloride	SW-846 8260	0.5
	Soil	Chlorobenzene	SW-846 8260	100
	Soil	Chloroform	SW-846 8260	6
	Soil	1,2-Dichloroethane	SW-846 8260	0.5
	Soil	1,1-Dichloroethylene	SW-846 8260	0.7
	Soil	Methyl Ethyl Ketone	SW-846 8260	200
	Soil	Tetrachloroethylene	SW-846 8260	0.7
	Soil	Trichloroethylene	SW-846 8260	0.5
	Soil	Vinyl chloride	SW-846 8260	0.2
		<b>TCLP Semivolatiles GCMS</b>	SW-846 8270	mg/L
	Soil	o-Cresol	SW-846 8270	200
	Soil	m-Cresol	SW-846 8270	200
	Soil	p-Cresol	SW-846 8270	200
	Soil	Cresol (Total)	SW-846 8270	200
	Soil	Pentachlorophenol	SW-846 8270	100
	Soil	2,4,5-Trichlorophenol	SW-846 8270	400
	Soil	2,3,6-Trichlorophenol	SW-846 8270	2
	Soil	1,4-Dichlorobenzene	SW-846 8270	7.5
	Soil	2,4-Dinitrotoluene	SW-846 8270	0.13
	Soil	Hexachlorobenzene	SW-846 8270	0.13
	Soil	Hexachlorobutadiene	SW-846 8270	0.5
	Soil	Hexachloroethane	SW-846 8270	3
	Soil	Nitrobenzene	SW-846 8270	2
	Soil	Pyridine	SW-846 8270	5

### LANDFILL DISPOSAL ANALYSIS

Quantity	Matrix	Parameters	Method	Detection Limit
		<b>Total Metals Analyses</b>		mg/kg
	Soil	Arsenic	SW-846 7060, 7061	MDL
	Soil	Barium	SW-846 7080 or 6010	MDL
	Soil	Cadmium	SW-846 7130, 7131 or 6010	MDL
	Soil	Chromium (Total)	SW-846 7190, 7191 or 6010	MDL
	Soil	Lead	SW-846 7420, 7421 or 6010	MDL
	Soil	Mercury	SW-846 7470, 7471	MDL
	Soil	Selenium	SW-846 7740 or 7741	MDL
	Soil	Silver	SW-846 7760 or 6010	MDL
		<b>Total Volatile Organics Analysis</b>		
	Soil	Benzene	SW-846 8260	MDL
	Soil	Carbon tetrachloride	SW-846 8260	MDL
	Soil	Chlorobenzene	SW-846 8260	MDL
	Soil	Chloroform	SW-846 8260	MDL
	Soil	1,2-Dichloroethane	SW-846 8260	MDL
	Soil	1,1-Dichloroethylene	SW-846 8260	MDL
	Soil	Methyl Ethyl Ketone	SW-846 8260	MDL
	Soil	Tetrachloroethylene	SW-846 8260	MDL
	Soil	Trichloroethylene	SW-846 8260	MDL
	Soil	Vinyl chloride	SW-846 8260	MDL

**LANDFILL DISPOSAL ANALYSIS**

Quantity	Matrix	Parameters	Method	Detection Limit
		<b>Total Semivolatile Organic Analysis</b>		
	Soil	o-Cresol	SW-846 8270	MDL
	Soil	m-Cresol	SW-846 8270	MDL
	Soil	p-Cresol	SW-846 8270	MDL
	Soil	Cresol (Total)	SW-846 8270	MDL
	Soil	Pentachlorophenol	SW-846 8270	MDL
	Soil	2,4,5-Trichlorophenol	SW-846 8270	MDL
	Soil	2,3,6-Trichlorophenol	SW-846 8270	MDL
	Soil	1,4-Dichlorobenzene	SW-846 8270	MDL
	Soil	2,4-Dinitrotoluene	SW-846 8270	MDL
	Soil	Hexachlorobenzene	SW-846 8270	MDL
	Soil	Hexachlorobutadiene	SW-846 8270	MDL
	Soil	Hexachloroethane	SW-846 8270	MDL
	Soil	Nitrobenzene	SW-846 8270	MDL
	Soil	Pyridine	SW-846 8270	MDL
	Soil	PCB	SW-846 8080	0.5 mg/Kg